

## A new species of *Hermatobates*

(Hemiptera: Heteroptera)

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*Hermatobates* is a genus of rarely collected and little known marine insects. The first species, *H. haddoni* Carpenter was described in 1892. Several additional species were described subsequently (Coutière and Martin, 1901a, 1901b; China, 1956, 1957; Herring, 1965) and they were all assigned to the Gerridae although Matsuda (1960), in his review of the World Gerridae, excluded *Hermatobates* from that family. The status of this genus is thus still debatable; it will be discussed elsewhere (Andersen, Cheng & Polhemus, in preparation). A review of the relevant literature, with a list of the known species, their distributions and their biology, was published by Cheng (1976).

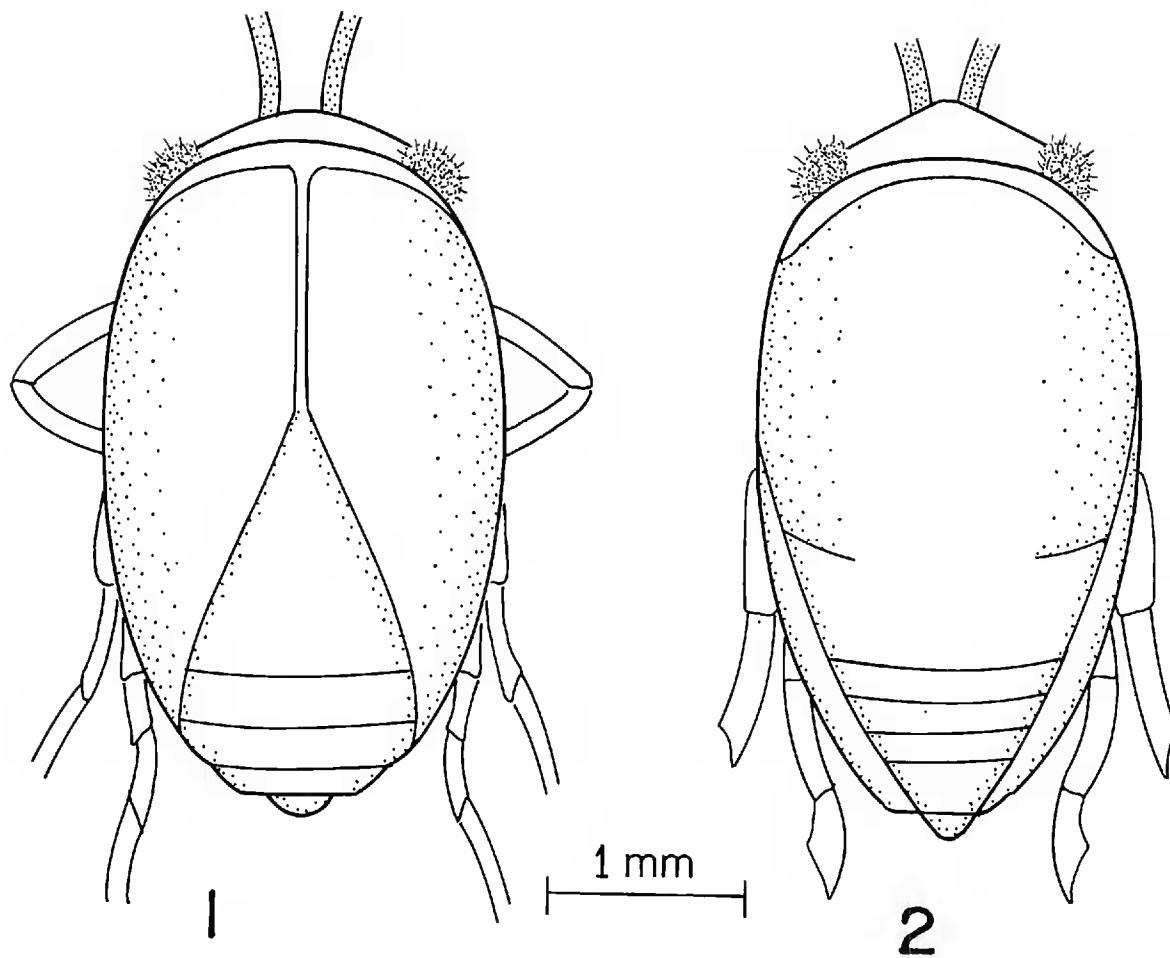
The specimens to be described in the present paper were collected off the west coast of Singapore; they were referred to briefly, without specific epithet, by Cheng (1966, 1976).

### *Hermatobates singaporensis* new species

*Holotype male*.—(Figs. 2, 5 and 6). Apterous, dark brown dorsally, paler brown ventrally, without distinct markings. Body covered with short, velvety hairs. Legs with front femora greatly swollen, bearing thirteen small teeth between basal and distal tubercles; distal tubercle interlocks with tubercles borne at proximal end of front tibia which bears two oblique hair combs at distal end, with a broad groove between them (Fig. 3). Length, 3.5 mm; width, 2.0 mm; ratios of various antennal and leg lengths as follows (10 units = 1 mm): Antennae, 9: 9.5: 6: 6; front leg, 14: 14: 1: 1.5: 3; middle leg, 23: 12: 1: 6.5: 5; hind leg, 22.5: 13: 1: 6: 5.5 (there are 3 tarsal segments on each leg).

*Allotype and paratype female*.—Color pattern as in male; meso- and meta-nota differ from male in structure, with lobe-like extensions almost reaching apex of abdomen (Fig. 1). Front femora not swollen, bearing a row of small teeth on ventral edge but without pronounced tubercles (Fig. 4). Length, 3.6 mm; width 1.8–1.9 mm; ratios of various antennal and leg length as follows: Antenna, 7: 7: 5: 6; front leg, 11: 11: 1: 2: 3; middle leg, 18: 10: 1: 6: 5; hind leg, 18: 10: 1: 5.5: 5.5.

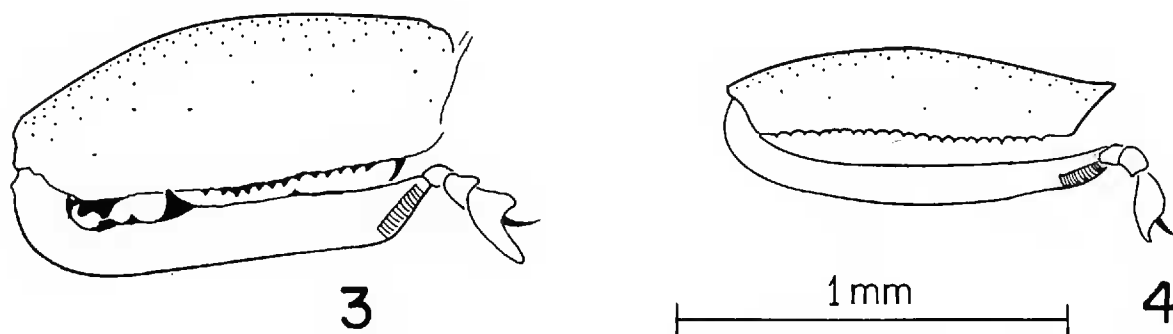
*Type locality*.—Holotype male, allotype and one female paratype from approximately 01° 17' N and 103° 52' E, about 5 km off the Siglap coast of Singapore near an offshore "Kelong" (fishing platform). The type specimens, one male and two females, known only from the type locality, were collected by dip netting from a small boat on 3 October, 1963. All three type specimens deposited at the U.S. National Museum, Washington, D.C.



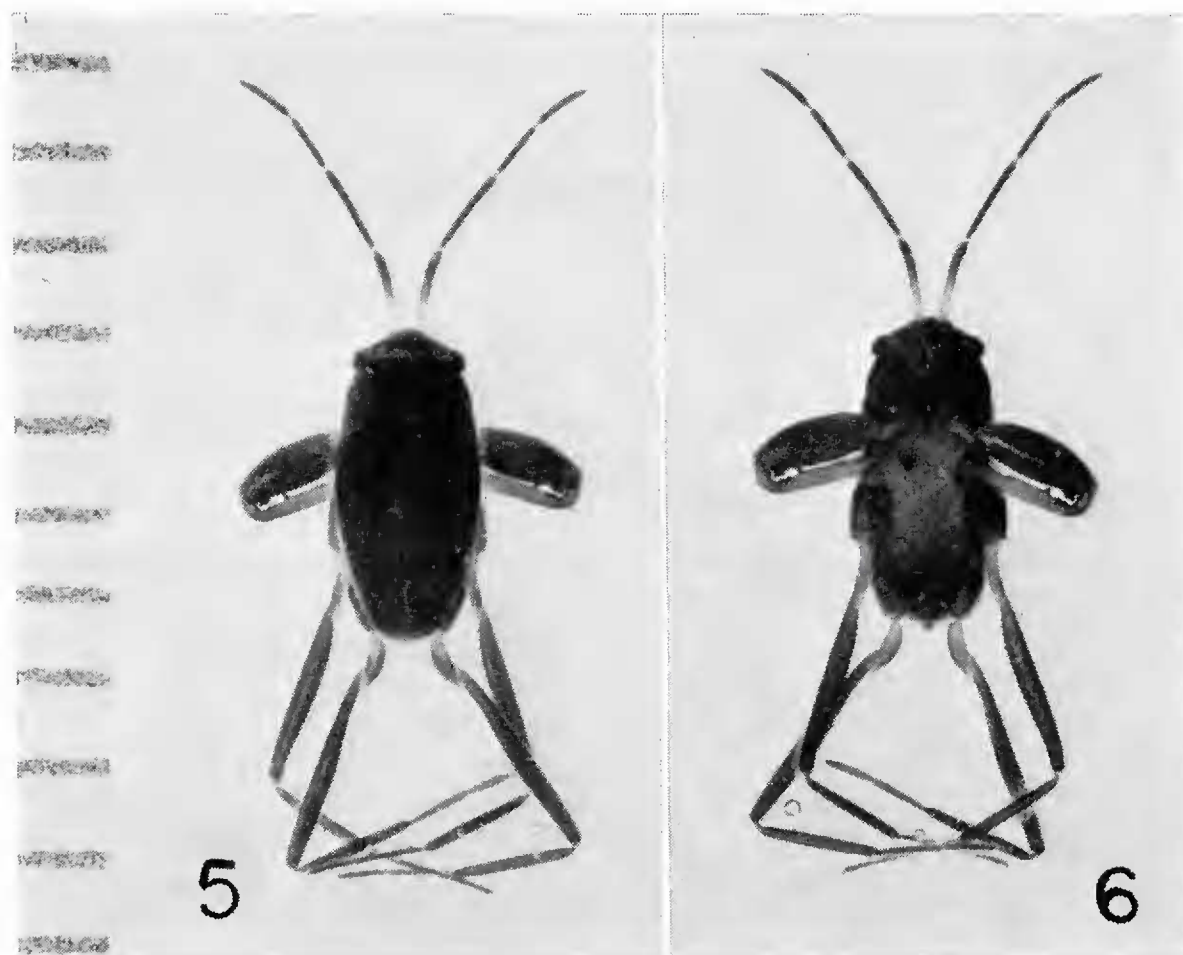
FIGS. 1-2. *Hermatobates singaporensis*. Fig. 1. Female. Fig. 2. Male.

*Diagnosis.*—This species can be distinguished from the 8 known species of *Hermatobates* by the arrangements of the teeth and tubercles on the male front femur and tibia. In this respect it appears to be closer to *H. weddi* China (1957), described from Monte Bello Island, and *H. marchei* (Coutière et Martin) (1901b) from the Philippines. However, the front femur of the former species has 14 small teeth between the basal and apical spurs and the latter has 12. There are 13 in *H. singaporensis*. The number and arrangement of tubercles on the front tibia are quite different in the three species.

I thank Dr. Jon L. Herring, U.S. Department of Agriculture, U.S. National Museum, Washington, D.C. for confirming this is a new species.



FIGS. 3-4. *Hermatobates singaporensis*. Fig. 3. Foreleg, male. Fig. 4. Foreleg, female.



FIGS. 5-6. *Hermatobates singaporensis*, holotype male (scale in mm). Fig. 5. Dorsal aspect. Fig. 6. Ventral aspect.

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### SCIENTIFIC NOTE

**Confirmation of the beach habitation of *Apatolestes actites* Philip and Steffan (Diptera: Tabanidae) on the California coast.**—The original description of *Apatolestes actites* Philip and Steffan (tribe Pangoniini) was based on unique specimens of each sex that apparently were taken on or near two California beaches (1962, Pan-Pac. Entomol., 38: 41-43). The type locality of *A. actites* is Goleta Beach, near Santa Barbara, Santa Barbara Co., Calif. A third specimen that is present in the insect collection of the California Department of Health, Vector Control Section, Berkeley, was collected along the California coast at Montana de Oro State Park, San Luis Obispo Co. Its somewhat teneral condition suggests that it had emerged near the collection site.

One of us (VFL) collected a female *A. actites* on a sandy beach near Bolinas Point, Marin Co., on 16 June 1974. Further collections made there in 1974 yielded one male, one female, and about seven tabanid pupal skins; the latter were found among driftwood in the supralittoral zone. On 4 July 1975, a cool, overcast day, 30 flies (8 ♂, 22 ♀) were collected on this beach by five persons. Flies were prevalent below the high tide mark where clumps of seaweed were present. Numerous tabanid pupal skins and desiccated pupae (tribe Pangoniini) were found in, on, or protruding from sand above the high tide mark. Characteristics of the imago of *A. actites* (e.g., pilose body, bare eyes) were visible through the cuticle of the dead pupae. In the same area larvae of a species of Pangoniini were collected from sand approximately 8 to 10 cm below the surface. Dr. W. W. Middlekauff, Mr. T. Sukekane, and Mrs. S. Lane assisted in the July 4th collections.

Immatures also believed to be those of *A. actites* were collected at Manchester State Beach, Mendocino Co., California, on 14 and 27 July 1975. This record, if confirmed, would extend the northernmost distribution of *A. actites* approximately 140 km beyond Bolinas Point.

The foregoing observations support our belief that *A. actites* breeds on beaches along the California coast. We are attempting to rear larvae obtained from both the Marin and Mendocino Co. sites to conclusively associate them with pupae and adults.—V. F. LEE, *California Academy of Sciences, Golden Gate Park, San Francisco, Calif. 94118*; R. S. LANE, *California Department of Health, Vector Control Section, Berkeley, Calif. 94704*; and C. B. PHILIP, *California Academy of Sciences, San Francisco, Calif. 94118*.